FISHER-ROSEMOUNT

RS3™

Software Release Notes

Software Version 18, Release 2.4

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RS3™

Software Release Notes

About This Manual

This document provides information about Version 18 Release 2.4 software and hardware.

Section 1: Lists Version 18 enhancements to RS3™.

Section 2: Lists software and hardware requirements for Release 2.4 of Version 18.

Section 3: Lists system improvements, including corrected software discrepancies.

Section 4: Version 18 changes to RS3 manuals.

Changes for This Release

Two software discrepancies for ABC Batch have been corrected. See Section 3 for details.

The software and hardware requirements tables in Section 2 have been organized functionally by RS3 subsystem. There is also an updated table of new hardware and current hardware supported in the Version 18 Release 2.4 environment. See Section 2 for details.

CE-compliant Discrete I/O 2 hardware is compatible with the latest release of Version 18 software.

Revision Level for This Manual

For This Software Version:	Refer to This Document:		
	Title	Date	Part Number
18R2.4	Software Release Notes	October 1995	1984-2818-01x8
18R2.3	Software Release Notes	June 1995	1984-2818-01x7
18R2.2	Software Release Notes	May 1995	1984-2818-01x6

For This Software Version:	Refer to This Document:		
	Title	**Date**	**Part Number**
18R2.1	Software Release Notes	January 1995	1984-2818-01x5
18R2	Software Release Notes	August 1994	1984-2818-01x4
18R1.5	Software Release Notes	November 1993	1984-2818-01x3
18R1	Software Release Notes	October 1993	1984-2818-01x2
17R2	Software Release Notes for Version 17	December 1992	1984-2817-01x3

References to Other Manuals

References to other RS3 user manuals list the manual, chapter, and sometimes the section as shown below.

Sample Entries:

For ..., see CC: 3.

Manual Title Chapter

For ..., see CC: 1-1.

Manual Title Chapter-Section

Abbreviations of Manual Titles

- **AL** = Alarm Messages
- **BA** = ABC Batch
- **BQ** = Batch Quick Reference Guide
- **CB** = ControlBlock Configuration
- **CC** = Console Configuration
- **CQ** = Configuration Quick Reference Guide
- **DT** = Disk and Tape Functions
- **IF** = Intelligent Fuzzy Logic Control Manual
- **IO** = I/O Block Configuration
- **IT** = Intelligent Tuner Manual
- **OP** = Operator's Guide
- **OV** = System Overview and Glossary
- **PW** = PeerWay Interfaces
- **RB** = Rosemount Basic Language
- **RI** = RNI Release Notes and Installation Guide
- **RP** = RNI Programmer's Reference Manual
- **SP** = Site Preparation and Installation
- **SQ** = Service Quick Reference Guide
- **SR** = System Resource Unit (SRU)
- **SV** = Service

Reference Documents

Prerequisite Documents

You should be familiar with the information in the following documents before using this manual:

System Overview Manual and Glossary	1984-2640-18x1
Software Loading and Upgrade Procedure, Including Batch (Version 18)	1984-2818-02xx
Software Discrepancies for Version 18	1984-2818-03xx

Related Documents

You may find the following documents helpful when using this manual:

ABC Batch Software Manual	1984-2654-18x1
Alarm Messages Manual	1984-2657-18x1
ABC Batch Quick Reference Guide	1984-2814-11xx
Configuration Quick Reference Guide	1984-2812-08xx
Console Configuration Manual	1984-2643-18x1
ControlBlock Configuration Manual	1984-2646-18x1
I/O Block Configuration Manual	1984-2645-18x1
Operator's Guide	1984-2647-18x1
PeerWay Interfaces Manual	1984-2650-18x1
Rosemount Basic Language Manual	1984-2653-18x1
RNI Programmer's Reference Manual	1984-3356-01x1
RNI Release Notes and Installation Guide	1984-3357-01x1
Service Manual, Volume 1	1984-2648-18x1
Service Manual, Volume 2	1984-2648-18x2
Site Preparation and Installation Manual	1984-2642-xxx1
System Resource Unit (SRU) Manual	1984-2651-18x1
User Manual Master Index	1984-2641-18x1

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Section 1:
Version 18 Release 2.4 Enhancements to RS3

The software numbers of the subsystems for Version 18 Release 2.4 are as follows:

- Console 18.22
- Coordinator Processor (CP)
  - $CP4BAT18xx - 18.10
  - all other images - 18.09
- Controller Processor
  - MPC2+ image - 18.06
  - all other images - 18.05
- System Resource Unit (SRU) 18.10
- Supervisory Computer Interface 18.07

Table 1.1 describes changes to RS3 V18 software through Version 18 Release 2.4.

NOTE: In Table 1.1, the field labeled “For More Information” tells you where to find additional detail, either in these release notes, or in the reference manuals. A key to the manual abbreviations that are used in the table appears in the front of this document.

New Features through Version 18 Release 2.4

Table 1.1. Summary of New Software Features through Version 18 Release 2.4

Feature	Description	For More Information
ABC Batch Recipe and Unit Recipes	Recipes can now execute batch units in parallel. Several new subrecipe types and icons have been added in order to permit parallel processing of batch units from a single recipe. A Unit Recipe performs operations on an individual batch unit. The Main Recipe starts Unit Recipes and determines the order in which batch unit processes are executed.	BA: 3–1
ABC Batch Task	The terms “Slot” and “Task” were being used interchangeably to represent one batch concept. All ABC Batch software now uses “Task”.	BA & RB
ABC Batch Update Function	New “Update” function updates scripts from level 11.4 to 11.5. The Update function can update all scripts in the script file from 11.4 to 11.5. An “Update” field appears in the upper–left corner of the script. To run the Update function, press [ENTER] on the “Update” field. The script and all subsequent scripts in the file are updated. To update all scripts in the file, you must begin the Update function in the first level 11.4 script.	UP: 6
ABC Batch Virtual Memory	See Virtual Memory in this table.	BA: 3–1
ABC Batch Working Recipe View screens	Several changes have been made to the Working Recipe View screens that are not documented in the BA manual. • On the Icon View screen, the following state commands were removed: Next, Retry, Hold, Resume, Stop, and Abort. Because these commands were removed after ABC Batch manual was printed, the manual incorrectly shows these commands on the Icon View screen. You can still control individual icon states from the Batch Monitor screen or from a BFACE object on a process graphic where it is easier to monitor the RBL code or plant in response to state changes. • The “Started” field has been removed from the Icon View and UR View screen, but not from the Recipe View screen.	BA: 4–1
ABC Log folder	ABC Log folder now stores recipes as Working Recipes and Finished Recipes.	BA: 2–1
ABC Log folder Auto Delete	The Batch Configuration screen includes an “ABC Log folder Auto Del” field to automatically delete Finished Recipes from the folder. If there is insufficient space in the folder for additional Working Recipes, the oldest Finished Recipes are automatically deleted from the folder until there is enough space for the new Working Recipe.	BA: 2–2

(continued on next page)

Table 1.1. Summary of New Software Features through Version 18 Release 2.4 (continued)

Feature	Description	For More Information
ASCII Structure Keyword Usage	Recipe Block: "Control_Name" keyword now receives its data from another source in the recipe. This field is only relevant for storing historical information. It does not affect recipe execution. "Secure_ID_Logs" keyword has been deleted. It is no longer used by the ABC Batch system. Icon Types: There are three new icon types and associated new keywords: Communication Operation Icon <Channel> (new keyword) Unit Recipe Icon <Unit_Recipe_Name> (new keyword) Start Unit Recipe Icon <Unit_Recipe_Name> (new keyword)	--
Batch Configuration screen	Modified the Batch Configuration screen to enable the configuration of redundant data bases. New features include: • ABC Log Folder Auto-Delete • Plant Unit Data Base • Recipe Data Base • Recipe Support Data Base For more information on these features, see Redundant Databases entry in this table.	BA: 3-7
Batch Unit Sets	A batch unit set is a new feature for defining interchangeable sets of batch units for recipes. The batch unit set defines a sequence of units used by the recipe. Units for a set are selected from the Batch Units Table. You can configure up to 30 batch unit sets in a Unit Set File.	BA: 2-5
Console Configuration screen	A new field appears listing the tape drive installed on your system.	CC: 1 DT: 1
Continuous Links screen	Added "Conv" field to Continuous Links screen. For ControlBlocks residing on MPC+, RBLC2, and PLC2 Controller Processors, you can use the "Conv" field to convert input links to engineering units (such as GPM or inches) or normalized scaling (0-1 values). This conversion allows you to express equations in Math blocks and logic steps in an easily recognizable form. The conversion also allows you to read engineering units directly into ABC Batch without using *sclike.* Has no effect for batch writes *(unscale)*.	CB: 3-2
ControlBlocks	For MPCII Controller Processors, you can now configure up to 126 ControlBlocks per Controller Processor. For MPC1 Controller Processors, 99 ControlBlocks is still the limit.	CB: 1-1 OV: 5

(continued on next page)

Table 1.1. Summary of New Software Features through Version 18 Release 2.4 (continued)

Feature	Description	For More Information
CPIV software	Now provides 128K of batch configuration space and 56K of conventional configuration space per controller (for a total of 448K). The increased configuration space is only available with NVRAM memory boards of 2 Meg or greater capacity. The new software supports 1 meg boards but does not offer any increase in configuration space. When you upgrade a CPIV with 2 Meg NV memory, you must download the images twice or do a Disk Boot CP to make the software load correctly. For more information about upgrading a CPIV, see Section 3 of the Upgrade Procedure.	UP:3
Cyrillic characters	Converting RS3 configurations from English to Russian is now easier The block descriptors and input units can be temporarily displayed in Roman characters while you enter them in Cyrillic characters. For more information, see RN: 4-7.	RN:4
Data Compression Block	The Data Compression block is a new ControlBlock that allows you to select only significant changes in the control process and send them to QBI nodes or a Rosemount Network Interface (RNI) for later use by historians or supervisory computers. Each Data Compression block allows you to compress data from up to 16 process variables. **NOTE:** The software you need to configure Data Compression blocks is independent of the RNI and RMT/host software that you must configure to accept data from the blocks. This separation means that compressed data will only be available to historians or supervisory computers when RNI or RMT/host software is available to request it from the RS3.	CB: 9
HART Output Block	The HART Output Block (HOB) allows communication between the ControlBlock and Smart Field devices using HART-protocol messaging. The HOB shares attributes of the Analog Output Block (AOB) and the Smart Input Block (SIB). HOBs can determine actual valve positions, and allow operators to distinguish between transmitter and valve problems.	IO: 8-2
I/O Block Configuration screen	Added fields to the AOB Block Configuration Screen based on the new Multipoint Analog I/O Hardware.	IO: 2-2
Link Editor	Link Editor can now view 400 addresses, or 40 pages, of process graphics files.	CC: 2-3
Link Count	See Process Graphics entry in this table for description of new graphics field.	CC: 2-3

(continued on next page)

Table 1.1. Summary of New Software Features through Version 18 Release 2.4 (continued)

Feature	Description	For More Information
Mag Innovision CRT	P/N (10P50660002). The Mag Innovision CRT is a 15-inch color unit that connects to the Keyboard Interface via a D-Sub connector and twisted pairs of wires. This CRT requires video isolation provided by the keyboard interface. This unit can replace any 14-inch Sony unit. The adapter cable is part of the assembly.	--
Mitsubishi PLC	Added support for Mitsubishi PLC interface.	IO: 9
Modbus Message	Increased the number of coils read on a single Modbus message. The number of coils that can be read by a single Modbus read message increased from 80 to 1280.	IO: 9
Modification Level (ABC Batch)	Modification levels have been changed from a decimal number to a checksum number, based on the number of bytes in the table entry. During validation, recipes use modification levels to detect changes to scripts or table entries. You can restore a previous modification level by recreating the previous entry.	BA: 2-3 BA: 2-4 BA: 3-5
Parameter Formulas	A formula is a new feature for assigning sets of values to parameters in recipes. You can make multiple grades of a product with the same recipe by changing formulas. One formula can contain all the values for a particular grade of product.	BA: 2-8 BA: 3-6
Password Security Management	Version 18 includes a password management system that provides an electronic signature for each user. For a truly secure system, you should purchase the new keyboard interface, although the existing keyboard interface can be converted to a password system with a lesser degree of security. A new access level (SYSMGR) allows for configuration of a password system.	CC: 7
PLC Block Screen	The PLC block includes a new Write Filter field, which allows logic to act on the write time of a PLC block. The Write Filter Field allows a logic step to act on the write of a PLC block. When set to 'yes', the write filter is latched to the source link block. If the data type is flags, logic step 'p' rather than Q determines when the write occurs.	I/O: 9-3
Process Graphics	The Files Menu now contains a Link Count Field, which determines the number of ControlBlock links in a process graphic.	CC: 2-3
Process Graphics	The Top Menu now contains a LinkEd Field.	CC: 2-2-63
Process Graphics	The operation of the split/join commands has changed.	CC: 2-2-63 to 2-2-65

(continued on next page)

Table 1.1. Summary of New Software Features through Version 18 Release 2.4 (continued)

Feature	Description	For More Information
Plant Unit Data	On the Batch Configuration screen, you can now specify redundant primary and backup disk volumes for plant units owned by Working Recipes. Because Working Recipes can own plant units on a different volume, a single volume for plant units can serve all Working Recipes running on the PeerWay. **NOTE:** Working Recipe ownership of plant units is assigned automatically with the Rosemount Basic Language *ownunit* and *disownunit* instructions or manually on Batch Plant Unit Status screen (**BAP**).	BA: 2–2
PLC Bit Descriptors	The PLCB now supports 16-character bit descriptors.	IO: 9
Recipe Information Menu	In ABC Batch, the Recipe Information Menu has been modified: • On the Master Recipe, you can now select Unit Set Files and Formula Tables. • On the Control Recipe, you can now view information on the recipe configuration, batch configuration, and icon specific information; select Unit Set Files and Formula Tables; and update the database configuration to the Control Recipe. • On the Working Recipe, you can now view information on the recipe configuration, batch configuration, and icon specific information, icon variables, and available memory. **NOTE:** You no longer have to recreate the Control Recipe from the Master Recipe for changes to the Batch Configuration Database. The Control Recipe now includes the “Update Batch Configuration” function.	BA: 3–3
Recipe Locals Menu	The Recipe Locals Menu is a new feature used in a recipe to define decimal values for scripts. The Rosemount Basic Language *recipe_local* instruction uses an identification number assigned to a recipe local value in the recipe to reference the value.	BA: 3–6
Recipe Modify Menu	The Recipe Modify Menu has been modified for use with batch units sets. You select batch units from a batch units set for Unit–Process icons.	BA: 3–4
RECIPE Object for Batch Process Graphics	The RECIPE object is a new process graphic object that displays state information about the recipe unit and active operations.	BA: 6–1
Recipe Parameters Menu	The recipe Parameters Menu has been modified for formulas. You can now use parameter formulas to enter parameter values.	BA: 3–6
Recipe Renumber Icons	You can now renumber icons displayed on the recipes from the chronological order in which they were created to the sequential order in which they are displayed or as they were manually selected.	BA: 3–4

(continued on next page)

Table 1.1. Summary of New Software Features through Version 18 Release 2.4 (continued)

Feature	Description	For More Information
Recipe Save Menu	On the Master Recipe and Control Recipe, the Save Menu allows you to select batch unit sets and batch formula tables. You can now select batch unit sets for use by the Working Recipe by using the *mapunit* function.	BA: 3-5 BA: 3-7
Recipe Size Icons	You can now change the size of icons displayed on the recipes and graphic screen recipe displays.	BA: 3-4
Recipe Startup	Control Recipes can be quickly started by bypassing validation if the recipe was saved as runnable. Working Recipes can be quickly restarted by bypassing validation if the recipe structure has not changed; parameters can be changed.	BA: 3-5
Recipe Subtypes	ABC Batch has new recipe subtypes for main recipes and unit recipes.	BA: 3:1
Recipe View Menu	The Recipe View Menu is a new menu on the Working Recipe. It includes commands to control the execution of the Working Recipe or individual icons. These commands can select CP or SRU task modes and states.	BA: 4-1
Redundant Databases	On the Batch Configuration screen, you can now specify redundant primary and backup volumes for saving recipes. If you specify redundant volume pairs, recipes are saved on those volumes. Identical copies are maintained on both the primary and backup volumes. Recipes are backed up from the primary volume to the backup volume as each file is changed. Redundant Databases are configured on the Batch Configuration screen. You can specify redundancy for recipes (Recipe Data), scripts and tables (Recipe Support Data), plant unit ownership (Plant Unit Data), and reports (Report Data).	BA: 2-2

(continued on next page)

Table 1.1. Summary of New Software Features through Version 18 Release 2.4 (continued)

Feature	Description	For More Information
Rosemount Basic Language	The following are new instructions in the Rosemount Basic Language (RBL): align_on — Used in *while* instructions to synchronize execution of recipes. align_wait — Suspends execution of a *while* loop for a specified time interval. alv2str — Returns a text value for the user permission level for the new password security system. array_copy — Copies a range of array elements for *vdims* and *dims* into another array; not supported for rvdims or rstringdims. array_init — Initializes a range of array elements for *vdims* and *dims*; not supported for rvdims or stringdims. begin_recipe — Begins execution of a Working Recipe from an RBL script; similar to *run_recipe ()* function; includes *unit set* file, *formula*, and *recipe_local* parameters. fetch — Reads variables in another subrecipe. file_copy — Copies virtual array or report files into another file of the same type. file_delete — Deletes a virtual array file or report file. file_rename — Renames a virtual array file or report file. getmatlim — Get the material value and limits from the Batch Materials Table. inputp — Assigns permission to a user to use segments of RBL code for the new password security system. mapunit — Assigns a batch unit set to the Working Recipe. on varray_err — Directs execution if the script cannot read or write to a virtual array. recipe_local — Reads or writes to recipe local values in the Working Recipe. rvdim — Creates a redundant virtual array file on the primary and backup disks. rvstringdim — Creates a redundant virtual string array file on the primary and backup disks. varray_file — Changes file name used by a virtual array during execution. whois — Returns log-in information about a user at the selected console node	RB: 1
Rosemount Network Interface (RNI)	There are two new screens (Configure RNI and RNI Status) that are for use with the Rosemount Network Interface (RNI).	RI: 6

(continued on next page)

Table 1.1. Summary of New Software Features through Version 18 Release 2.4 (continued)

Feature	Description	For More Information
Small Computer System Interface (SCSI) Board	1984-3301-000x marked “SCSI BOARD” on the PWA replaces 1984-1140-000x marked “OISCSI HOST ADAPTER” on the PWA. The SCSI board requires OI 68020 or 68040 processor with a boot ROM of at least 9.23 (68020) or 10.05 (68040). **NOTE**: Do not mix -3301 and -1140 boards in a Multitube console.	--
SQC	Up to 200 control charts can now be configured.	SR: 3-2
SQC Configuration screen	Added the “Filter Repetitive Alarms” field. This field allows you to prevent the following repetitive alarms from being sent out over the PeerWay: • SQC: File at 75% Capacity • SQC: Population XXX Deleted • SQC: 10% of POP XXX Deleted • SQC: Min Samp of POP R Deleted • SQC: POP Change Successful	SR: 3-3
SQC Configuration screen	Added the “Eval Link” field. This field allows you to configure a control chart so it can be automatically enabled/disabled.	SR: 3-2
SQC Configuration screen	Added “Display Recent Data” field. This field allows you always to display the most recent data samples for a given chart on the SQC Display screen.	SR: 3-3
SQC Display screen	The most recent data for a control chart can be displayed by placing the cursor on the “Sample” field and pressing [ENTER]. The chart updates automatically.	SR: 3-2
SQC Display screen	Data points that were previously out of range and not displayed can now be displayed by pressing [Ctrl-t] to rescale the range.	SR: 3-2
Tape Drive Type	The Console Configuration screen, page 2, has a new field that indicates the type of tape drive that is used on your console. This is a display field only on the Disk Master node. If you have a floppy drive on the console, the ‘Tape Drive Type’ field indicates ‘None’.	CC: 1 DT: 1
Unit-Process icon	In Batch Recipes, the Process icon is now called the Unit-Process icon.	BA: 3-1
Virtual Memory (ABC Batch)	ABC Batch uses virtual memory files to manage console memory. Virtual memory files are created from recipes and designated by a tilde symbol (~) in the ABC Data folder.	BA: 3-1

(continued on next page)

Table 1.1. Summary of New Software Features through Version 18 Release 2.4 (continued)

Feature	Description	For More Information
Write Filter Field	See PLC Block Screen in this table.	--
Write Finished Recipe	ABC Log Folder *Finished Recipe* is now stored in the color of the last path through the recipe.	BA: 4–1

Summary of Recent Hardware Releases

Table 1.2 lists recent hardware which operates in the Version 18 Release 2.4 environment. This is not a complete list, but is provided as a guide to make you aware of new hardware.

Table 1.2. Summary of New Hardware through Version 18 Release 2.4

Part Number	Description	For More Information
10P-5093-0001 10P-5096-0001	Fiber Optic PeerWay Extender (PX), Tap A Fiber Optic PeerWay Extender (PX), Tap B	Hardware Installation Instruction 1984-3363-0009
10P-5320-0001	PLC/RBL FlexTerm	Hardware Installation Instruction 1984-3363-0010
10P-5352-0006 10P-5355-0006	Multipoint Discrete I/O FIM, low side switch Multipoint Discrete I/O FIM, high side switch	Hardware Installation Instruction 1984-3363-0013 1984-3363-0014
10P-5270-0001	Direct Connect Termination Panel	Hardware Installation Instruction 1984-3363-0013
1984-4121-0001 1984-4124-0001	Multipoint Discrete I/O Opto-Termination Panel (A) Multipoint Discrete I/O Opto-Termination Panel (B)	Hardware Installation Instruction 1984-3363-0014
1984-4282-0001	Multi-FIM Termination Panel	SV:6 SP:7
1984-4167-0001	High Density Termination Panel	SV:6 SP:7
10P-5066-0002	Mag Innovision 15 Inch CRT Monitor	--
1984-0390-000x	AC/DC Power Supply (Without Battery Backup)	SV:1 SP:5
1984-4302-000x 1984-4329-0001 1984-4329-0002 1984-4329-0003 1984-4433-xxxx	Remote I/O Power Supply AC Distribution Block DC Distribution Block (10 circuits) DC Distribution Block (1 circuit) DC I/O Power Cable (B Bus)	SV:1 SP:2
1984-3211-000x 1984-3214-000x	Optical PeerWay Tap Box (A) Optical PeerWay Tap Box (B)	SV:02
1984-3202-00xx	OI Processor V (68040)	SV:03
1984-3286-000x 1984-3246-000x 1984-2633-000x	Sony 14 Inch CRT Monitor CPD-1430 Sony 14 Inch CRT Monitor CPD-1304S Sony 14 Inch CRT Monitor C-1404S	SV:03

Table 1.2. Summary of New Hardware through Version 18 Release 2.4 (continued)

Part Number	Description	For More Information
	Keyboard Interface Card (KBI):	SV:03
1984-3222-0004	Standard Keyswitch and Dual Keyswitch	
1984-3222-1004	Remote Keyswitch	
1984-3222-2004	Password Security	
1984-2889-0004	Standard Keyswitch	
1984-2889-1004	Remote Keyswitch	
1984-1978-000x	Standard Keyswitch (without video isolation)	
1984-3289-000x	Viper 2060S Magnetic Tape Drive	SV:03
1984-3389-000x	Viper 2150S Magnetic Tape Drive	
1984-3318-000x	Fujitsu DL3800 Printer	SV:03
1984-3270-0001	ControlFile Data Bus Terminator board	SV:04
1984-4080-0001	Multipoint Discrete I/O FIM	SV:06
1984-4167-000x	High-Density Isolated Discrete Termination Panel	SV:06
1984-4282-000x	Multi-FIM Discrete Termination Panel	
1984-4344-000x	Standard Remote Termination Panel	
1984-3278-000x	Fiber Optic I/O Converter	SV:06
1984-4308-000x	Loop Power Module	SV:06
1984-4414-000x	Multipoint Analog Input FIM	SV:06
1984-4418-000x	Multipoint Analog Output FIM	
1984-2530-0001	QBI Hardware Kit, MicroVax II Series	SV:07
1984-2627-0001	QBI Hardware Kit, MicroVax 3xxx Series and VAX 4xxx series	
1984-3261-0002	QBUS Board 1 (CPU Card)	
	RS3 Network Interface (RNI)	SV:07
1984-4323-000x	RNI Power Regulator	
1984-4270-000x	RNI PeerWay Interface	
1984-4457-0002	RNI CPU board	
1984-4386-000x	RNI cabinet assembly	

Hard Drive Compatibility

Table 1.3 lists the hard drives that are compatible with the latest software revisions.

Table 1.3. Console Hard Drive Compatibility Matrix

Console Software Revision (English)	040 with V10.04 Boot ROMS or higher	All 68020	All 68000
V18.03 & up	LPS105S LPS170S 270S	LPS105S LPS170S 270S	N/A*
V17.06	N/A**	LPS105S	N/A*
V17.01	N/A**	LPS105S	N/A*
V16	N/A**	LPS105S	N/A*
V15.20	N/A**	LPS 105S LPS170S 270S	LPS 105S LPS170S 270S
V15.14	N/A**	LPS105S	LPS105S
V15.12 & lower	N/A**	LPS105S	LPS105S

* 68000 consoles not supported by these software versions.

** 68040 consoles not supported by these software versions.

Floppy Drive Compatibility

Table 1.4 and Table 1.5 show which versions and ROMs support the 3.5 inch floppy drive.

Table 1.4. SCSI Host Adapter (1984-1140-0001) - Floppy Drive Compatibility

Console Software Revision (English)	040 with V10.05 Boot ROMS	040 with V10.04 Boot ROMS	020 with V9.23 Boot ROMS	020 with V9.11 thru V9.18 Boot ROMS
V18.18	X	X	X	X
V18.13		X		X
V18.03		X		X
V17.06				X
V17.01				X
V16				X
V15.20				X
V15.14				X
V15.12 & lower V15				X

NOTE: 68000 consoles are not supported.

Table 1.5. SCSI Board 2 (1984-3301-0001) - Floppy Drive Compatibility

Console Software Revision (English)	040 with V10.05 Boot ROMS	020 with V9.23 Boot ROMS
V18.18	X	X

Tape Drive Compatibility

Table 1.6 lists the tape drives that are compatible with the latest software revisions.

Table 1.6. Tape Drive Compatibility Matrix

Console Software Revision (English)	040 with V10.04 Boot ROMs or higher	020 with V9.18 Boot ROMs or higher	020 with V9.17 Boot ROMs	020 with V9.15 Boot ROMs	020 with V9.12 & lower Boot ROMs	All 68000
V18.03 & up	Viper2150S*, 2060S, Scorpion	Viper2150S*, 2060S, Scorpion	Scorpion	Scorpion	Scorpion	N/A**
V17.06	N/A***	Viper2060S or Scorpion	Scorpion	Scorpion	Scorpion	N/A**
V17.01	N/A***	Viper2060S or Scorpion	Scorpion	Scorpion	Scorpion	N/A**
V16	N/A***	Scorpion	Scorpion	Scorpion	Scorpion	N/A**
V15.20	N/A***	Viper2150S*, 2060S, Scorpion	Scorpion	Scorpion	Scorpion	Scorpion
V15.14	N/A***	Viper2060S or Scorpion	Scorpion	Scorpion	Scorpion	Scorpion
V15.12 & lower	N/A***	Scorpion	Scorpion	Scorpion	Scorpion	Scorpion

* The Viper2150S can read a tape made on a Scorpion or Viper2060S, but not vice versa.

** 68000 is not supported by these software versions.

*** 68040 is not supported by these software versions.

Section 2:
Version 18 Release 2.4 Software and Hardware Requirements

This section provides Version 18 software and hardware requirements, and information on temporary coexistence of RS3 software versions to facilitate plant upgrades.

Changes in RS3 Hardware Requirements

MiniConsoles and 68000 consoles are not supported in Version 18 software. Contact your Fisher-Rosemount service representative for the available upgrade options.

Version 18 Release 2.4 Requirements

The following tables list hardware and software requirements for Version 18 Release 2.4. If you are a current user who is upgrading to this version and release, you should make sure that your system meets these requirements. If your system does not, contact your Fisher-Rosemount sales or service representative.

This information in this section has been reorganized and appears in several requirements tables.

- Table 2.1 CPIV and CPIV+ controllers
- Table 2.2 CPII controller
- Table 2.3 CPI controller
- Table 2.4 I/O cards
- Table 2.5 Hard disks
- Table 2.6 Console processors (68040)
- Table 2.7 Console accessories (trackball, etc.)
- Table 2.8 Miscellaneous system components

Table 2.9 lists software I/O images required for CPIV ControlFiles. Table 2.10 lists images for CPII ControlFiles.

Determine Upgrade Requirements

After you obtain information about your ControlFile, use Table 2.1, Table 2.2, and Table 2.3 to determine if your current installation supports the new software.

CP Requirements

Table 2.1. CPIV and CPIV+ Requirements

CP		Memory		Controllers		Images	
Type	**Boot ROM**	**Size/Type**	**Part Number**	**Type**	**Boot ROM**	**Control Type**	**File Name**
CPIV+ CPIV	4.02 4.02	2MB NV RAM 1MB NV RAM 1MB Bubble	1984-2347-0021 1984-2347-0011 1984-1598-0001	MPCII	6.05	MPC2+	$$MPC2+_xx
						PLC+	
						MUX+	
						RBLC2	$$RBLC2_xx
		2MB NV Memory	1984-2347-0021	MPCII	6.05	ABC Batch	$$CP4 BATxx
CPIV	4.02	2MB NV RAM 1MB NV RAM 1MB Bubble	1984-2347-0021 1984-2347-0011 1984-1598-0001	MPCI	5.21	MPCAS	$$MPCASxx
						MPCAP	$$MPCAPxx
						MPCAT	$$MPCATxx
						MPTUN	$$MPTUNxx
						PLC	$$PLCMxx
				MPCI	5.17	SMART	$$SMARTxx
						MPC	$$MPCAxx
				CC	5.15	CC	$$STDCxx*
				MLC		SSC	
				MUX		Mux	
				SSC		SSC	

* If you upgrade to a CPIV or CPIV+ from a CPII with CC, MLC/SSC, or MUX, you must load the $$STDCxx image to the CPIV/CPIV+ as an additional image.

Table 2.2. CPII Requirements

CP		Memory	Memory	Controllers		Images	
Type	**Boot ROM**	**Size/Type**	**Part Number**	**Type**	**Boot ROM**	**Control Type**	**File Name**
CPII	2.70	2MB NV RAM 1MB NV RAM 1MB Bubble .5MB Bubble .5MB Bubble	1984-2347-0021 1984-2347-0011 1984-1598-0001 1984-1483-000x 1984-1224-000x	CC	5.15	CC	$$CPxx
				MLC	5.15	SSC	
				MUX	5.15	Mux	
				SSC	5.15	SSC	
				MPCI*	5.17	MPC	$$MPCAxx
						SMART	$$SMARTxx
					5.21	MPCAS	$$MPCASxx
						MPCAP	$$MPCAPxx
						MPCAT	$$MPCATxx
						MPTUN	$$MPTUNxx
						PLC	$$PLCMxx

* You can use an MPCII with a CPII if you jumper the MPCII to be an MPCI.

Table 2.3. CPI Requirements

CP		Memory		Programs
Type	**Software**	**Size/Type**	**Part Number**	
CPI	9.63			9.56 Controller Processor software
		2MB NV RAM	1984-2347-0021	CC
		1MB NV RAM	1984-2347-0011	MLC
		1MB Bubble	1984-1598-0001	MUX
		.5MB Bubble	1984-1483-000x	SSC
		.5MB Bubble	1984-1224-000x	PLC

I/O Requirements

Table 2.4. I/O Requirements

Type	Part Number	Card Name	F-Rev	S-Rev	Added Functionality
AO					
CIO	1984-1304-000x	Contact I/O			
	1984-1460-000x(1)	Contact I/O	3.1		
SI					
AIO					
AIO–R	1984-2518-0001	Analog FIC	1.x	1.6	
				4.6	.125 s scan time
AIO-R	1984-2518-0002	Analog FIC	2.x	3.x	
AIO–RS	1984-2519-0002	Analog FIC SMART	2.x	4.4	RIOB
					268 or 275 Handheld
				4.6	.125 s scan time
				4.7	HART Output Block
PIOB	1984-2546-000x	Pulse I/O FIC	1.15		
TIB	1984-2731-000x	Temperature FIC	1.8	3.1	
DIO	1984-4080-000x	MDIO I/O FIM	1.1	3.4	
DIO2	10P–5352–0006 (L) 10P–5355–0006 (H)	DIO2 FIM	6.6	3.12	CE compliant
MAI	1984-4414-000x	MAIO Input FIM	1.1	1.2	
MAO	1984-4418-000x	MAIO Output FIM	1.1	1.2	

(1) If you are using a serial Contact FlexTerm (1984-2576-000x), you must use this card (1984-1460-000x).

Console Requirements

Table 2.5. Console – OI Processor

Processor	Part Number	Boot ROM	Storage	SCSI Adapter
68040	1984-3202-000x	10.05		SCSI Board 2 (1984-3301-0001)
		10.04	Floppy disk drive (1984-2837-000x)	SCSI Host Adapter (1984-1140-0001)
		10.04	RS3*T3 150S (qic–150) RS3*T2 60S (qic–60) RS3*T1 45S (qic–45)	
68020	1984-3202-000x 1984-1161-000x	9.23	Floppy Disk Drive (1984-2837-000x)	SCSI Board 2 (1984-3301-0001)
		9.18	RS3*T3 150S (qic–150) RS3*T2 60S (qic–60)	
		9.11	Floppy Disk Drive (1984-2837-000x)	SCSI Host Adapter (1984-1140-0001)
		9.08	RS3*T1 45S (qic–45)	

Table 2.6. Console Accessories

Keyboard Revisions		Option	Part Number
Device	Revision		
KBI	4.02	Secure Keyboard	10P–5084-2004* 1984-3222-2004
	3.7	Enhanced operator/engineer keyboard	10P–5084-0004* 1984-3222-0004
	1.4	Configuror Keyboard	1984-3222-1004
TB	1.1	Trackball	
DISPPNL	1.3	Operator Keyboard	
OPTPNL1 OPTPNL2 OPTPNL3	1.1	Options Keyboard	1084-1632-000x

* CE compliant

Identify Requirements for other System Components

Table 2.7 lists requirements for other RS3 system components.

Table 2.7. Miscellaneous System Components

System Component	Boot ROM	Processor	Software
SRU	9.08	68020	
RNI			
HIA		60000	
SCI	8.xx	60000/1 MB	
Diogenes	8.xx	60000/1 MB	
MicroVAX with Host Mode			RMT/host software 4.0

Memory Allocations and Plant Program Space

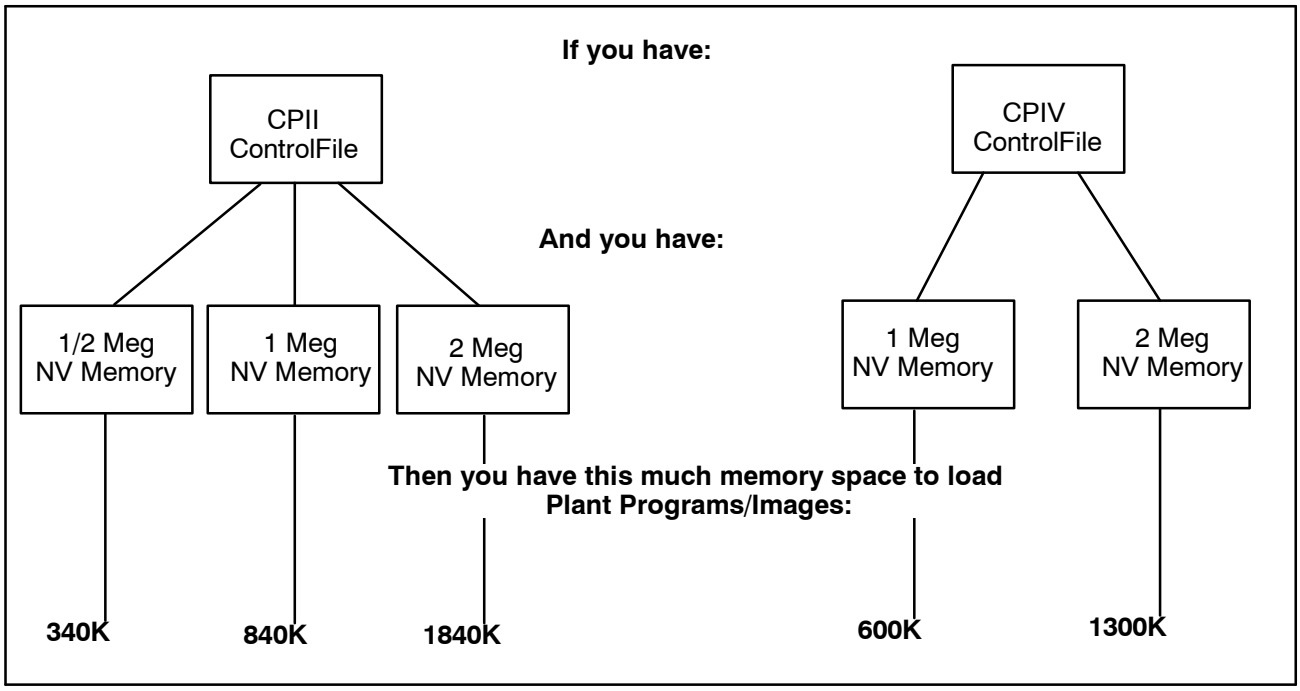

Figure 2.1. Memory Allocations and Plant Program Space

NOTE: Be sure to calculate available space for plant programs and images to be used before upgrading software. Check plant program/ image sizes from file size number in the Plant Program Folder.

Section 3:
System Improvements

This section describes improvements to the RS3 system, including corrected discrepancies.

Corrected Discrepancies

Table 3.1 lists corrected discrepancies since Version 18 Release 2.3. Table 3.2 lists software discrepancies that have been corrected since the first release of Version 18. The table itself is organized alphabetically by subsystem, then by rating, with higher ratings appearing first. The ID column specifies the RS3 subsystem: (Batch, Controller, Console, SRU, Comm, or I/O), followed by a number used to track this change. The Rating column contains a two-character code. The letter stands for the type of change made to the software--'D' stands for 'discrepancy'-- and the number is a measure of its importance, with 1 being the most important.

NOTE: While many of the descriptions seem to indicate a problem by the way the sentence is phrased, in fact, they are a description of a problem that has been verified and fixed.

Table 3.1. RS3 Corrected Software Discrepancies after Version 18 Release 2.3

ID	Description	Rating
Batch 801337	All running recipes while not downloading scripts or handling exceptions do disc reads in a tight loop causing peerway problems.	D1
Batch 801351	A cp goes down before a unit recipe start is backed up to bubble. When the cp recovers there is no way to re-start the unit recipe.	D2

Table 3.2. RS3 Corrected Software Discrepancies previous to Version 18 Release 2.3

ID	Description	Rating
Batch 800938	An overwrite from ascii deletes recipe on primary node.	D1
Batch 801023	A cp reboot or cp switch confuses the working recipe.	D1
Batch 801040	RBL files cannot be seen or accessed on disk when “free bytes” size is down to 512.	D1
Batch 801168	Print conversion character %f for floating point numbers sometimes displays incorrect decimal values.	D2
Batch 801188	When entered on the BAI screen, a decimal number of 0.1 (for example 32.1) is displayed incorrectly as a floating point number (for example, 32.999).	D2
Batch 800826	On the Formula Table, deleting a formula other than the last formula created, corrupts the Formula Table.	D2
Batch 800842	If you delete a unit recipe, the parameters are overwritten.	D2
Batch 801156	Branches in Decision icons are swapped after an ASCII conversion.	D2
Batch 800844	In Batch, the Q.v flags are getting the Q.t flags.	D2
Batch 800859	The RBL “input” command should allow input of “[YyNn]...” followed by characters in excess of the 80 character screen length. If this occurs, the console crashes.	D2
Batch 800994	Selecting on the Kill field in the Recipe View window does not kill the recipe.	D2
Batch 800638	If a Control Recipe with a batch unit set is upgraded from V18R1, the “Batch Unit” field might be empty.	D3
Batch 800688	The Material Properties screen does not scroll.	D3
Batch 800701	If a recipe that executes parallel operations is stopped in Static mode, only the left-most icon will have a Static mark.	D3
Batch 800629	You can create and download recipes in ASCII with illogical icon links.	D4
Batch 800810	Static mark sometimes follows recipe icons when recipe is put back into normal mode.	D4
Batch 800816	If the primary abc log folder is full and the backup folder is not full, the begin_recipe instruction fails.	D4
Batch 800821	Copy a recipe icon and the parameters for that new icon are not saved to disk in their entirety. This only happens in a special case.	D4

Table 3.2. RS3 Corrected Software Discrepancies previous to Version 18 Release 2.3 (continued)

ID	Description	Rating
Batch 800835	The begin_recipe instruction may fail and cause node to reboot when the recipe has parameters.	D4
Batch 800837	The Master Recipe is corrupt on a remote primary node; but the backup recipe on the backup node is okay.	D4
Batch 800889	When configuring on peerway 9 and above, batch will halt on dot operator assignments.	D4
Batch 800929	Working recipes sometimes get created only on the primary or the backup nodes.	D4
Batch 800940	The begin_recipe instruction takes 10 minutes to start NV_VAR-c.	D4
Batch 800983	On the recipe screen, sometimes the ASCII conversion buttons are not available and the word “Writing” is in their place.	D4
Batch 801165	Upon ASCII conversion, display of recipe on screen was corrupt.	D4
CP 800920	If you load the controlfile with the $CP4_18 image, the controlfile will not function.	D1
CP 800939	Controller “Free Space” and “Config NVM Free” are incorrect after an upgrade to V18R2.1	D1
CP 800927	You cannot download to a 1 MEG NVRAM after “Peerway Booting” a CP4.	D2
CP 800967	Using a download script for a CP and controller causes the “Program NVM Free” calculation to be wrong.	D2
CP 800968	There is no indication that a second download of a program image is required when upgrading to V18R2.1.	D2
CP 800996	You cannot download images after initially “Peerway Booting” to an “Initialized” 2 MEG NVRAM.	D2
Comm 800930	Boot ROM problem causes build failure in 68000 series devices.	D1
Comm 800788	Only an existing file can be overwritten on the RS3 from the SCI. You must make a file on the RS3 before you can write to it from the SCI.	D3
Console 800270	You cannot power up a single MTCC 68020 from an SMS floppy drive and 9.22 boot rom.	D1
Console 800421	The 340 Meg disk fails on diagnostics at power up of console.	D1
Console 800850	The Bus locks up and overlays are lost when using a floppy or tape device.	D1

Table 3.2. RS3 Corrected Software Discrepancies previous to Version 18 Release 2.3 (continued)

ID	Description	Rating
Console 801034	While displayed, the Operator change log screen on the ’040 console causes excessive entries in the disk event list.	D2
Console 800784	Consoles reboot in the night when no operators are working.	D2
Console 800776	Using callup buttons to switch between the Disk Directory PeerWay screen and a process graphic might lock up the console.	D4
Console 800882	When you print batch scripts from a console on peerway 10, the characters print/line is changed and remain changed until the printer is powered down.	D4
Console 801027	Console crashes when report status entries overflow the display buffer.	D4
IO 801240	If redundant MAO FIMs fail at exactly the same time, the redundant fail safe configuration is lost.	D4
IO 801241	If an MIO or DIO fail safe I/O configuration is changed by disk load controller activity, the highest points on the FIM might not be configured.	D4
IO 801245	The HOB block might not work when it is in digital mode.	D4

Section 4:
Version 18 Changes to RS3 Manuals

This section describes changes made to the following Version 18 Release 2 manuals. These changes were made after the Version 18 manuals were released, so they supplement or correct the Version 18 set.

- ABC Batch Manual
- Alarm Messages Manual
- I/O Block Configuration Manual
- Console Configuration Manual

Changes to ABC Batch Manual

The following changes apply to the ABC Batch Manual, and supplement any existing V18R2 documentation.

ASCII Conversion

When performing an ASCII conversion, moving the trackball suspends the operation. You can resume operations by hitting the space bar.

Additions to Alarm Messages Manual

The following additions apply to the Alarm Messages Manual, and supplement any existing V18R2 documentation.

No.	Message	Description	List	Alarm Area
146	First Channel Missing Blk	The first point of a DIB or DOB is unconfigured. This causes all other DIB/DOB points to lose their switch voltages. Make sure the first point is configured.	H	ControlFile
692	Batch node:task <xx> Load Unsuccessful	A batch task failed to load from disk. First, make sure the script you specified exists on the correct disk. Second, select on the script from the Batch Run screen to avoid typing errors. Finally, ensure that you do not have another task running. Retry the restore operation after each of these suggestions.	D	Disk
698	File Deleted from ABC Log Folder	The system has deleted a file from the ABC Log folder. When the Auto-Delete field is set on the Batch Configuration screen, the system will automatically delete finished recipe files from the ABC Log folder on a first-in, first-out basis.	D	Disk
699	Batch script deleted <xx> file	A file, <xx>, has been deleted by a batch script. The file may be a virtual array, virtual string array, or a report file.	D	Disk
732	Fatal Recipe Start Error	A start script associated with a recipe has failed. You should wipe the batch task associated with the failed unit icon and start the recipe using the start/validate menu option.	B	ControlFile, SRU
764	Batch script renamed <xx> file	A batch script renamed a file, originally called <xx>. The file may be a virtual array, a virtual string array, or a report file.	B	ControlFile, SRU
765	Batch script copied <xx> file	A batch script copied the file <xx>. The file may be a virtual array, a virtual string array, or a report file.	D	Disk
766	Redundant size check failed for file	When the system starts up, a size check is automatically performed on redundant files. This message indicates that two files do not match. This alarm can occur when a node goes down and subsequently returns online. You should check the files (listed by name in the Disk Event List below the actual message) on both the main and redundant disks to locate which file size is correct. You should then delete the bad file and replace it by copying the good one in its place.	D	Disk

No.	Message	Description	List	Alarm Area
767	File error during redundant check of file	This alarm is related to 766. In this case, the redundancy check is unable to access a file. It may be inaccessible for a number of reasons. You should ensure the file is not currently being viewed on another node. Once you are sure the file is not in use, you may want to re-activate the redundant check. From the Batch Configuration Screen, unpart and then re-part the two nodes. Be sure that a check is not currently in progress. Status is visible on the Batch Configuration screen. If this procedure does not work, the file is more than likely corrupt and should be deleted.	D	Disk
790	RNI: <xx> Config save to primary failed.	Appears when the RS3 attempts to save a value to an RNI (Rosemount Network Interface) Primary Configuration Server from the Configure RNI Screen. The Configuration Server may be improperly installed or configured. Check the Configure RNI Screen to ensure you entered a valid RNI node number or user message pair. <xx> refers to the name the user has assigned to the configuration.	S	PWay I/F
791	RNI: <xx>Config save to backup failed.	Appears when the RS3 attempts to save a value to an RNI (Rosemount Network Interface) Backup Configuration Server from the Configure RNI Screen. The Configuration Server may be improperly installed or configured. Check the Configure RNI Screen to ensure you entered a valid RNI node number or user message pair. <xx> refers to the name the user has assigned to the configuration.	S	PWay I/F
800	Duplicate Master Node: <xx>	This alarm occurs as the result of a SCSI bus timeout. Reboot the console.	D	Console, Disk

Changes to I/O Block Configuration Manual

The following changes apply to the I/O Block Configuration Manual, and supplement any existing V18R2 documentation.

Table 4.1. V18 R2 Additions to I/O Block Configuration Manual

Description	Insert Page(s)
The “Stat” fields on the Transmitter Configuration Screen Transmitter Status Screen, HART Output Device Configuration Screen, and the HART Output Device Status Screen may return valid HART errors which do not refer to the particular block where they appear, but to a smart block existing on the same comm line.	IO:8-1-25a IO:8-1-46a IO:8-2-15a IO:8-2-23a

Responding to Stat Field Errors with SIB and HOB Blocks

The ‘Stat’ field on the Transmitter Status Screen, Transmitter Configuration Screen, HART Output Device Status Screen, and HART Output Device Configuration Screen displays a HART command that fails. If you have SIB and/or HOB blocks in different card cages both configured at point 1 on their respective FICs (or any identical point), you may receive a misleading Stat error referring to any smart block configured on that comm line.

For example, Cage A, point 15 is configured as a SIB.
Cage C, point 15 is configured as a HOB.

A Stat error of 130.0 007 (write protect mode) appears on the SIB alarm line. It is a valid alarm, but it may come from any SIB and/or HOB block configured on that comm line--cage C, point 15, for example.

You can determine which point is causing the Stat alarm in several ways:

1. Looking at your process to determine what block is in a condition to return a HART Stat error, and responding accordingly;
2. Repeating a given HART command.

Changes to Console Configuration Manual

The following change applies to the Console Configuration Manual and supplements any existing V18R2 documentation.

Converting RS3 Configurations from English to Russian

The block descriptors and input units can be temporarily displayed in Roman characters while you enter them in Cyrillic characters.

❑ **To temporarily see the field in English:**

- [SELECT] on block descriptors or input units.

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RS3™
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